

# **Oleomargarine**

## **Its Purity, Wholesomeness and Economic Importance**

**BY J. S. ABBOTT**

**Secretary, Institute of Margarin Manufacturers**

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**BULLETIN No. 4**

**September 30, 1922**

The object of this bulletin is to set forth the fact that oleomargarine, also called margarin and margarine, is a clean, pure and wholesome article of food, and that it is scientifically made of the food products of American Agriculture under government inspection. It therefore has a rightful place in our diet as well as in our economic system.

Issued by the  
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## IMPORTANCE OF FATTY FOODSTUFFS IN OUR DIET

“An abundant supply of fat is of major importance in the consideration of nutrition, whether of the individual or the nation. Not only are fats wholesome, palatable, and most useful in cooking, but many also carry fat-soluble vitamin A.

“An adequate national food policy therefore requires that an abundant fat supply be maintained during peace times as well as during war, and there is justification for the efforts made to find new sources of food fats and to make better use of those we now have.”—U. S. Dept. of Agr. Bulletin No. 1033, July 27, 1922.



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# OLEOMARGARINE

## Its Purity, Wholesomeness, and Economic Importance

*By J. S. ABBOTT, Secretary,*  
Institute of Margarin Manufacturers

**O**LEOMARGARINE has been used in the United States for about fifty years. The annual consumption of it is from 100,000,000 to 400,000,000 pounds. Its composition, wholesomeness, food value, and economic importance are therefore worthy of careful consideration.

There is no mystery about this product. The processes of manufacture are well known or can be easily ascertained. Its composition is also well known. The government publishes annually not only the name but the quantity of each and every foodstuff used in its manufacture. By referring to Table I, it will be observed that they are fats, salt, and milk. These are pure and wholesome articles of food that are consumed in one form or another every day.

### Classes or Groups of Foodstuffs

On the basis of their composition, foodstuffs have been divided into five classes, viz., protein, fats, carbohydrates, mineral matter, and water. In common language, according to the U. S. Food Leaflet No. 4, they are classified as follows:

1. Vegetables and fruits.
2. Milk, Eggs, Fish, Meat, Cheese, Beans, Peas, Peanuts.
3. Cereals—Corn meal, Oatmeal, Rice, Bread, etc.
4. Sugar, Sirups, Jelly, Honey, etc.
5. Fats—Butter, Margarine (also called margarin and oleo-margarine), Cottonseed oil, Olive oil, Drippings, Suet, Lard, Neutral lard, Peanut oil, Oleo oil, Corn oil, Coconut oil, and many others.

### Functions of Fats as Food

Oleomargarine belongs in that group of foodstuffs that has been designated Fats. It should always be considered on that basis and

with that fact in mind, for each class of foodstuffs performs a pretty definite function or functions in our bodies. The fats perform two distinct functions. They make the rest of our diet more palatable and they supply our bodies with energy, that is, heat and power to work. According to the best scientific information a pound of one kind of fat yields exactly the same amount of heat and muscular energy as a pound of any other kind of fat and one kind of fat is "digested with practically the same ease and completeness" as any other kind of fat.<sup>1</sup> See Table II. On the basis of the actual utility of a fat as a foodstuff, there is therefore no choice except in the matter of cleanliness, soundness, freedom from contamination, in short, safety as a food, price, convenience of handling, suitability for certain cooking purposes, and last but by no means least, palatability.

### Palatability of Fats

Notwithstanding the fact that fats make the rest of our diet more palatable, fats themselves are not very palatable to the American people. Nobody in this country eats a fat or fatty foodstuff by itself. When eaten with the rest of our diet, the palatability of fatty foodstuffs depends upon their origin, upon the degree of their refinement, and upon the processes of their preparation. The refining processes may remove their flavor. In the making of mixtures or compounds in which fats are the chief constituents, desirable flavors may be imparted to them. On this point, Holmes and Lang<sup>2</sup> make the following statement:

"The flavors and odors of fats are probably due to the presence in them of small amounts of difficultly removable substances rather than to specific properties of the pure fats themselves, in view of the fact that flavors and odors become much less noticeable the more completely the fats are purified. The characteristic flavor of butter, for example, is due to the absorption by the fat of the substances formed in the fermentation of milk and cream by lactic acid and bacteria and to the presence of small particles of curd."

### How Oleomargarine is Made

The basis of the modern methods of making oleomargarine and the reasons for making it are found in the foregoing statements which may be summed up briefly as follows:

The digestibility and energy value of the several kinds of fats as

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<sup>1</sup> Dr. E. V. McCollum, *The Day's Food in War and Peace* by the U. S. Dept. of Agriculture and the U. S. Food Administration.

<sup>2</sup> A. D. Holmes and H. L. Lang, *Bul. 469*, U. S. Dept. of Agriculture.



food are practically the same. Fats have very little if any flavor. Desirable flavors can be imparted to them. The liquid fats can be easily changed into soft or hard fats. The oleomargarine manufacturer's problem and his service to humanity is that of increasing our supply of fatty foodstuffs by utilizing our less expensive but equally valuable food fats by making them more palatable and by changing them from the inconvenient liquid form to a convenient soft or hard consistency.

In making oleomargarine the manufacturer ripens clean pasteurized milk under thoroughly sanitary conditions to the point that it will impart an agreeable flavor to the fats and oils which he prefers to use in his product. The mixture of ripened milk and fats and oils is then agitated, chilled, and worked to remove the excess water from it. It is salted to taste, cut or moulded into prints, and packed as it appears in commerce. The whole process seems very simple, but it is in reality a very scientific one. Every ingredient must be pure and clean. Temperatures must be exactly right. Machinery, buildings, and workmen must be clean. Even the air in the buildings must be clean. Some factories pump the air through purifying machines into the manufacturing rooms.

### **Government Supervision of Oleomargarine Manufacture**

The government supervision over these factories as well as over the manufacture of the product itself was well explained in the able address of Dr. E. P. Schaffter, Inspector in Charge, Bureau of Animal Industry, U. S. Department of Agriculture, at the third annual convention of the Institute of Margarin Manufacturers. He explained in detail the government supervision over every ingredient of oleomargarine that contains animal fat from its source clear through to the labeling of the finished product. The following excerpts from his address are sufficient to indicate the thoroughness of that supervision in connection with oleo oil, neutral lard, milk and butter, as well as with the buildings themselves. Dr. Schaffter said:

"My desire is to present to you in a brief and general way the inspection of the products entering into the composition of oleomargarine, the character of the equipment for handling the ingredients used in its preparation, and the requirements as to sanitation in the establishments that operate under inspection.



“Regulations governing meat inspection in the U. S. Department of Agriculture require, primarily, that the construction of establishments which operate under inspection must conform to a type that will readily permit of their being maintained in a clean and sanitary condition. Abundant light, both natural and artificial, and sufficient ventilation are required in all rooms and compartments. Efficient drainage and plumbing system, and all drains and gutters should be properly installed with approved traps and vents to insure proper sanitary conditions. The rooms and compartments in which any meat or products is prepared or handled should be free from odors from the dressing rooms, toilets, etc. \* \* \*

“The water supply shall be ample, clean and potable. Equipment and utensils used for preparing, processing and otherwise handling meat or meat products shall be of such materials and construction as will make them susceptible of being readily and thoroughly cleaned. Special reference is made to the need of properly constructed equipment for pumping or otherwise conveying milk or cream or a mixture containing milk and cream through pipes or open conductors. The pumps, pipes, conductors and fittings shall be of sanitary construction. \* \* \*

“The scope of inspection of the products entering into the composition of oleomargarine in reality begins with the ante-mortem inspection and continues throughout its various phases of processing and handling until it has reached that stage where the label is applied to the container and the product is ready for shipment. But we will refrain from dealing with the general subject of inspection except as it directly applies to the products used in the manufacture of oleomargarine.

“The fats principally used in the production of oleo oil (which is used in making oleomargarine) and stearin are the caul and ruffle fats of the beef. One of the first operations in the dressing of the beef carcass is to make the incision along the median line, laying back of hide and the removal of the caul fat. This fat is placed immediately in a metal receptacle, separate for the purpose of identification, and held until the final inspection of the carcass is completed. \* \* \* After the fats are removed they are placed in receptacles with cold water and chilled until the animal heat is removed.

“The product is now ready for the manufacture of oleo oil stock and stearin. The fats are then transferred from the chilling tanks to the enterprise hasher. In order to prevent unnecessary handling of the fats, this hasher is made portable so that it can be stationed near the steam jacketed melting tank so as to allow the fat to drop directly into the tank. This tank is equipped with mechanical agitators and the fat is melted at a temperature ranging between 145 and 155 degrees F., agitating it all the while it is melting. When the melting process is nearly finished, it will be noted that the animal tissue is slowly sinking to the bottom leaving the clear oil or stock on top. \* \* \*

“When the oil has been thoroughly settled out, it is drawn off through a steam pipe arranged near the top of the tank and drawn into the super settling tanks and allowed to settle and dry out to insure against moisture and tissue. \* \* \*



"The oleo oil expressed from the stock runs off through a small metal trough connected with the press into a receiver and transferred from this receiver directly into new tierces at a temperature of about 90 degrees F. and allowed to remain in these receptacles until the temperature has lowered to about 65 or 70 degrees before being placed in the cooler. \* \* \*

"Neutral lard is one of the principal ingredients employed in the manufacture of oleomargarine. The manufacture of this product is similar to that of oleo stock, except for the temperatures and pressing. Chilling is also different. This lard is one of the best varieties of lard. It is made of the fat derived from the leaf fat of slaughtered animals (pork) in perfectly fresh state. It is taken immediately after the slaughtering and before the carcass is cold.

"The rendering tank or agitator used in the manufacture of neutral lard is an equipment, the construction of which renders it readily and easily maintained in a clean and sanitary condition, but because of its being used usually at varying periods of time, there is a possibility of its corroding or becoming rusty. The tank should be flushed thoroughly with hot water and thoroughly dried and rubbed on the inside with a cloth saturated with a pale paraffin oil. This has the effect of preventing rustiness.

"Dairy products used in the manufacture of oleomargarine are required to be pasteurized. Proprietors and operators are required to give to the Bureau advance information of the source of supply of butter intended for use in preparing oleomargarine so that the matter of pasteurization can be checked against the official list. It is the desire of some official establishments to pasteurize the butter by heating it to a temperature not less than 180 degrees F. This treatment of the finished butter for use in preparing oleomargarine is acceptable to the Bureau in lieu of the requirement that such butter should be made from pasteurized products. Milk and cream used in the preparation of oleomargarine should be pasteurized and the butter used for this purpose should be made only from pasteurized products.  
\* \* \*

"After the product is packed and ready for shipment, the package is required to bear either a stencil or a label showing the name of the product, the inspection legend and the establishment number.  
\* \* \*

"I have endeavored throughout the course of this paper to show the important part the Bureau occupies in the recommendation of the character of the equipment that is required to be used, the inspection of the fats to be assured that none but those which are clean and sound enter into the composition of these products, a constant supervision over the various processes of handling and manufacturing, and in fact a constant supervision until the product is prepared for shipment. During the entire course of their preparation, you will note that the inspector has insisted in avoiding all possible chances of contamination of the products entering into the manufacture of oleomargarine by contact with the arms and hands of the workmen. This has resulted almost entirely in the use of mechanical means for handling these products. \* \* \*



## **The Milk Used in Oleomargarine**

Not only must the milk and butter that are used in the manufacture of oleomargarine be pasteurized as Dr. Schaffter said, but the dairies themselves from which the milk is obtained must be inspected and must conform to the sanitary requirements of the government. This double precaution is taken to make it doubly certain that oleomargarine shall be a pure and wholesome product. The importance of a safe milk supply in the manufacture of milk products will be evident after reading the following paragraph on the subject by Dr. Lafayette B. Mendel, *Milk and Its Products, The Day's Food in War and Peace*. He said:

"It is unfortunate that a food as valuable as milk is one of our most perishable foods, and one which needs the most careful handling to keep it safe for use. We avoid dirty milk when we can see the dirt, but the existence of invisible dirt is sometimes forgotten. From the air (from contaminated water, from ill-cared-for utensils, from unclean hands the organisms called bacteria may find their way into the milk. Some of them are useful; without certain kinds, butter and cheese would not have their distinctive flavors. Some kinds cause milk to turn sour, though it still remains wholesome; others may form from it unwholesome, even poisonous products; still others may be disease germs that make milk a carrier of such maladies as infectious sore throat, diphtheria, typhoid fever, and tuberculosis. The only way to present danger is to see that everything connected with milk is kept as clean as possible and that neither the milk nor anything connected with it is handled by anyone who has come in contact with these diseases."

The milk used in every pound of oleomargarine made in the United States is produced and handled under the most sanitary conditions and finally pasteurized. It is therefore unquestionably safe in every respect. The animal and vegetable fats and oils that are used in the manufacture of oleomargarine are likewise pure and safe articles of food.

## **The Purity of Oleomargarine**

The purity, wholesomeness, cleanliness, safety, and food value of oleomargarine as it leaves the factory cannot be questioned. It is always a convenient, palatable, and safe article of diet. There is therefore no public health problem involved in it. It is the only article of food except meat and meat products that is under government inspection and supervision. The Bureau of Animal Industry even controls the labeling of every pound that contains any animal fat. The Bureau of Internal Revenue controls the labeling of every



pound of it regardless of its composition. The Bureau of Chemistry also has authority to prevent any adulteration or misbranding of it. More than 95 per cent of oleomargarine is now packed in clean sanitary cartons and thus protected from contamination on its journey to the consumer. By every test, oleomargarine is a clean, safe, nutritious fatty foodstuff that performs all of the functions of the Fats group of foodstuffs.

### **The Color of Oleomargarine**

The largest part of the oleomargarine sold in this country is white or nearly so. The ingredients used in its manufacture do not contain a sufficient amount of color to impart a yellow color to it. Some States prohibit the sale of oleomargarine of any shade of yellow. If it is artificially colored yellow, it is subject to a federal tax of 10c per pound. No such tax has ever been levied upon any other article of food. The manufacturer is not permitted to complete the manufacturer's job and color his oleomargarine to suit the eyes of the housewife. She must do that herself or learn to eat a white product. A little capsule of color therefore goes with each retail package of margarine or will be given to the customer on request. The housewife may color the margarine with it.

### **Vitamines**

So much has been written on Vitamines that it would be unnecessary to mention this subject in this connection were it not for the fact of so much false advertising in connection with this new doctrine. The only vitamine that has anything to do with oleomargarine, butter, or any one of the other numerous fats is vitamine A, commonly called "fat-soluble vitamine," because it is more soluble in fats than in water. The other vitamins are not present in fats in important quantities.

So far as is now known, plant life is the primary source of vitamins. Animal tissue, especially the fats, contains vitamine A provided the food which the animal eats contains it. The fats of cattle on green pasture in the spring time are rich in vitamine A. They contain less of it in the winter time when their feed is poor in it. Steenbock<sup>3</sup> says the vitamine content of butter varies with the breed and feed of the cow. He reported one experiment in which the butter fat of a cow fed exclusively on alfalfa hay did not contain any

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<sup>3</sup> Dr. H. Steenbock, The Science Press, Vol. 50, p. 352.



fat-soluble vitamins. Dutcher<sup>4</sup> says, "In addition to seasonal variations in the vitamin content of milk, we have observed marked effects of climatic conditions. Periods of drouth, followed by browning of the pastures and drying of the grass, are reflected in the growth curves of the experimental animals. Halliburton and Drummond<sup>5</sup> found by experiment that some margarins contain sufficient quantities of vitamin A to produce growth, reproduction, and the rearing of the young of animals. They also found that some of them do not. Daniels and Loughlin<sup>6</sup> found that rats fed on a ration from which all fat-soluble vitamins had been removed except what was in the lard of the ration grew normally, reproduced, and reared their young. They got the same results with cottonseed oil. This subject might be one of serious concern if there were only two or three sources of vitamin A. Fortunately there are, according to Eddy, The Vitamin Manual, some sixty and odd different foodstuffs that contain this vitamin. The chances of a failure to get all of it we need in a varied diet are therefore negligible. The following paragraphs of a press notice issued by the U. S. Department of Agriculture, June 19, 1922, is a sane, unselfish opinion on this subject:

"Ever since the discovery of the presence in certain foods of those mysterious beneficial substances now known as vitamins, it has been thought that they were to be found in animal tissues most abundantly in certain of the internal organs, especially the heart, liver, and kidneys, but the Bureau of Animal Industry of the United States Department of Agriculture now announces that they exist in the muscle fibre of beef, veal, mutton, lamb, and pork, and that pork is particularly well supplied with them. This new evidence on the distribution of vitamins in meats should not lead to the conclusion that certain meats are of low nutritive value because they are deficient in vitamins. Meat is one of our most important foods and would continue to be so even though it contained no vitamins."

A similar statement is applicable to any other foodstuff. The vitamin doctrine is yet in its infancy and our present information relating to it may be greatly modified by new discoveries in a short time. It is apparent therefore that it is not necessary to try to buy vitamins.

### **Economic Importance of Oleomargarine and of the Foodstuffs of Which it is Made**

Every civilized country is spending money in researches on the production and utilization of fats and oils. The political and economic

<sup>4</sup> Dr. R. A. Dutcher, The Journal of Industrial and Engineering Chemistry, December, 1921.

<sup>5</sup> The Journal of Physiology, Sept. 1917.

<sup>6</sup> Journal of Biological Chem., Vol. 42, No. 3.

life of a nation may depend upon these products. In an instructive and able address which he delivered at the Convention of the Institute of Margarin Manufacturers, Dr. W. W. Skinner, Assistant Chief of the Bureau of Chemistry of the U. S. Department of Agriculture, said:

“A failure to fully appreciate the essential importance of a supply of fat in the daily diet was one of the miscalculations of the German militarists in preparation for the great war. The Germans for years were mobilizing their agricultural and industrial resources in preparation for ‘the day’ and it seems now rather strange that, when so much energy and thought were expended in this direction, the potent fact of a deficiency in oils and fats should be ignored or discounted, especially since some of the foremost German scientists had pointed out the necessity for the growing of oil bearing plants and the domestic production of oils and fats to relieve the country from its undesirable condition of dependence upon foreign countries for an adequate supply. Shortly after the beginning of the war it became evident what an important aspect an adequate supply of oil was to assume. The Germans undoubtedly thought animal fats could be depended upon to furnish their needs, since German agricultural development for years had been deliberately and purposely devoted to the production and development of crops rich in carbohydrates. The error was soon discovered but try as they might the Germans never were able to supply the deficiency, and the lack of fats and oils had a direct and important influence as one of the factors in the final outcome.

“The lesson in this is for us to reach a full realization of the importance of fats in our economic development, and to fully appreciate the dependence of the national welfare both in peace and war upon an abundant and ever increasing supply of fats and oils. The important role, therefore, of fats and oils in our agricultural and economic development is the justification for the Department of Agriculture maintaining in its Bureau of Animal Industry a unit for investigational and research work upon animal fats, for maintaining in the Bureau of Plant Industry a unit for the study and development of our native oil bearing plants, and for the introduction and study of foreign plants which give promise of adding to our commercial sources of oils and fats, and for maintaining in the Bureau of Chemistry a research laboratory devoted exclusively to the consideration of chemical and physical problems of fats and oils especially those of vegetable origin, peculiarly important because of their relation to our food supply.”

The discovery of the process of making oleomargarine was a distinct contribution to science and to the welfare of man. Millions of pounds of milk and of animal fats and oils, products of agriculture, are now being utilized in convenient and palatable form rather than in a crude and unpalatable form. The economic importance of oleomargarine has been referred to in a most interesting and accurate



way by Mr. Associate Justice Field of the Supreme Court of the United States as follows:

“Upon first impressions one would suppose that it would be a matter for congratulations on the part of the State that in the progress of science a means had been discovered by which a new article of food could be produced equally healthy and nutritious and less expensive than one already existing, and for which it could be used as a substitute. Thanks and rewards would seem to be the natural return for such a discovery, and the increase of the article by the use of means thereby encouraged. But not so thought the Legislature of the great Commonwealth of Pennsylvania. I have always supposed that the gift of life was accompanied with the right to seek and produce food by which life can be preserved and enjoyed in all ways not encroaching upon the equal rights of others. I have supposed that the right to take all measures for the support of life, which are innocent in themselves, is an element of that freedom which every American citizen claims as his birthright. The right to pursue one's happiness is placed by the Declaration of Independence among the inalienable rights of man, with which all men are endowed, not by the grace of emperors or kings or by force of legislative or constitutional enactments, but by their Creator, and to secure them, not to grant them, governments are instituted among men. The right to procure healthy and nutritious food, by which life may be preserved and enjoyed, and to manufacture it is among these inalienable rights which, in my judgment, no State can give, and no State can take away, except in punishment for crime. It is involved in the right to pursue one's happiness.”

Oleomargarine is manufactured and sold in every civilized country. The number of oleomargarine factories in the important countries of the world, so far as the information is available, are given in Table III. Many leaders in agriculture throughout the world have been courageous enough and impartial enough to recognize the rights of consumers and of farmers in relation to this product. In this connection the remarks of Hon. S. F. Tolmie, Minister of Agriculture of Canada, will be worth considering. He was discussing a bill in the Canadian Parliament to prohibit the manufacture and sale of oleomargarine. The bill was overwhelmingly defeated. He said:

“While the National Dairy Council (of Canada) is an organization which is doing a great deal of good, an organization which may represent to a considerable extent the dairy interests of this country, still we must not forget there are hundreds of thousands of beef cattle in this country raised on the ranch and on the farm, and that the men who produce these cattle have every right to market their products to the very best possible advantage. In the average beef steer slaughtered in our packing houses there are ten or twelve pounds of oleo oil, and some tallow. The stearine is usually used for shortening in baking and the oleo oil is at present being used in the manufacture of oleomargarine. All this manufacture is carried on under

the most careful supervision, and this oleo is secured only from what are known as the edible fats of the animal carcass. We do not permit the manufacture of oleomargarine in the ordinary creamery or dairy, because it would be quite impracticable; we would have to maintain an army of inspectors to carry on that necessary inspection and supervision. The manufacture of oleo is permitted only in the packing houses of the country where we maintain a corps of skilled meat inspectors who see that all the various operations are properly carried out. In addition to the inspection of the oleo and of the fats from which the oleo is made, there is also the inspection of the vegetable oils. The milk and butter used in the manufacture of oleo must either come from tested cows, showing that the animals are free from tuberculosis according to the tuberculin test, or must be pasteurized, showing that there is no possibility of the oleo being contaminated by the use of tuberculous milk or butter in its manufacture. \* \* \*

"Now, with regard to the imported oleo, the animal oleo comes in here with a certificate from the Bureau of Animal Industry at Washington, D. C., U. S. A., which is the same as our Health of Animals Branch here, showing that the product has been manufactured under careful supervision. Vegetable oleos made from straight oils are accompanied by a certificate from the Bureau of Chemistry at Washington showing that these articles have been prepared under proper conditions. So that this oleo (oleomargarine) is perfectly safe from a health standpoint; it is considered very wholesome indeed, and by the addition of butter it is made more palatable. \* \* \* Now, the following is the result of the application of the law by the inspectors of the Health of Animals Branch and the Dairy Branch during the years 1919 and 1920. In 1919 there were 8 convictions under the oleo law, and 111 convictions for the manufacture of bad butter. In 1920 there were 12 convictions under the oleo law and 128 convictions for the manufacture of bad butter, showing that the maker of good butter has not so much to fear from the oleo manufacturer as he has from the man who tries to sell inferior butter.

"I do not see that this House [of Parliament] has any right to interfere with the choice of the individual with regard to its purchase. There is entirely too much interference with personal liberty at present, and I have no particular commodity in mind when I say that. If the housewife desires to use oleomargarine that is her right."

Every state in the Union as well as the federal government has a law or laws designed to prevent adulteration and misbranding of foodstuffs. In addition to these general food laws there are special laws prohibiting the adulteration and misbranding of oleomargarine. Nearly all of the large cities have similar laws and machinery for their administration. On January 17, 1921, this Institute addressed a letter to the law enforcing officials of the several States of the Union, asking for the number of persons that were prosecuted in their respective States during each of the preceding five years for the sale of oleomargarine as butter. The replies were that there were only sixty-five (65) prosecutions of that kind in the whole country, or an average of



13 prosecutions per annum. During that period there was an average of about 300,000,000 pounds of oleomargarine sold per annum. The federal government could not furnish similar information, but the Annual Report of the Commissioner of Internal Revenue for the year 1920 contains the following statement with reference to violations of the oleomargarine and butter laws:

"The receipts from the tax on oleomargarine and the tax on the business of persons engaged in the handling of this product during the last two fiscal years were as follows:

<i>Receipts from—</i>	<i>1919</i>	<i>1920</i>
Oleomargarine taxed at 10 cents a pound \$	680,351.45	\$1,194,720.17
Oleomargarine taxed at ¼ cent a pound.	852,888.80	930,343.25
Manufacturers' special tax.....	38,175.00	50,124.51
Wholesale dealers' special tax.....	445,366.49	494,961.92
Retail dealers' special tax.....	775,049.34	1,058,126.20
Total .....	\$2,791,831.08	\$3,728,276.05

"Violations of the oleomargarine law to the number of 161 cases were reported during the year. Of this number 123 cases were compromised and the remainder were either prosecuted or dismissed. In addition innumerable technical violations, due mainly to ignorance or carelessness as to requirements were discovered. As no hostility to enforcement of the law and regulations was apparent, the offenders were admonished by field officers and the cases dropped.

"The receipts from the tax of 10 cents a pound on adulterated butter and the occupational taxes imposed upon manufacturers of, and wholesale and retail dealers in, adulterated butter amounted to \$57,023.34, a decrease of \$15,264.58 from the previous year.

"Practically all these receipts represent the tax collected on creamery butter containing abnormal quantities of moisture found on the market and held to be adulterated, under the act of May 9, 1902, and occupational taxes also collected. There are but three regularly qualified manufacturers of adulterated butter under that act, all of whom produce that product for foreign markets and withdraw for export without the payment of tax."

It should be understood that the 161 cases of violations of the federal oleomargarine law were not all for selling oleomargarine as butter. Doubtless only a very small per cent were in that category. The law and the regulations for its administration are so complex that it is extremely difficult to comply with them. The Iowa law requires that oleomargarine be labeled "a substitute for butter." The Minnesota law specifically forbids that label. Margarin manufacturers have been prosecuted for using the word "churned" in advertisements describing the method of manufacture of oleomargarine, notwithstanding the fact that the milk and fats are put into a sure



enough butter churn which is revolved exactly as it is when cream is churned for butter. The reports, red tape, etc., which margarin dealers have to comply with, as with no other product, in marketing it, are difficult to comply with and many of the 161 violations mentioned were in that category.

The United States of America is the only country that has placed heavy burdens not only as taxes but unnecessary laws and administrative regulations for their enforcement upon this product of agriculture. The sort of taxes are indicated in the report of the Commissioner of Internal Revenue as quoted above. These hardships are to a degree a prohibition of the manufacture and sale of oleomargarine, for they actually limit the consumption of it by limiting the number of producers and dealers in the industry and by prohibiting manufacturers from imparting to the product those qualities which the consumer demands.

Many great thinkers believe that one nation has a right to protect its own industries by levying taxes upon the products of the competitive industries of foreign countries or even by outright prohibition of the importation of such products. But no one has ever advocated the policy of prohibiting the sale of any useful and necessary consumable commodity to protect another commodity produced under the same flag.

Oleomargarine is not only a wholesome foodstuff, safe from the standpoint of public health, an economic necessity, but it is manufactured and sold as oleomargarine in compliance with most stringent and even unfair laws. Had it not been for the fact that it competes with other products its invention would be more generally emphasized as one of the great scientific contributions to human welfare.



# TABLE I

Materials Used in the Manufacture of Oleomargarine, Year ended June 30, 1921.

	Pounds		Pounds
Cocoonut oil .....	103,111,916	Butter .....	1,498,625
Milk .....	79,715,584	Corn oil .....	925,999
Oleo oil .....	49,675,749	Soya-Bean oil .....	461,129
Neutral oil .....	29,267,960	Edible tallow .....	233,227
Salt .....	25,365,499	Mustard-seed oil .....	109,748
Cottonseed oil .....	18,532,860	Coloring .....	25,915
Peanut oil .....	16,332,498	Miscellaneous .....	3,216,742
Vegetable oil .....	6,559,034		
Oleo stearine .....	4,857,972		
Oleo stock .....	2,065,231	Total .....	341,955,688

# TABLE II

Digestibility and Energy Value of Edible Fats

	Digestibility	Energy Value
Oleomargarine .....	97%	About 3,500 calories per pound
Butter .....	97	About 3,500 calories per pound
Cocoonut oil .....	97	4,080 calories per pound
Olive oil .....	98	4,080 calories per pound
Peanut oil .....	98	4,080 calories per pound
Oleo oil (Prepared from beef fat) .....	97	4,080 calories per pound
Hog fat .....	97	4,080 calories per pound
Cottonseed oil .....	97	4,080 calories per pound

# TABLE III

The Number of Oleomargarine Factories, the Per Capita Consumption, and the Production of Oleomargarine in the Most Important Countries of the World

Countries	Number of Margarin Factories	Per Capita Consumption Per Annum	Total Annual Production	
		Pounds	1913	1920
United States .....	63	1.5 in 1913 3.8 in 1920	145,227,862	391,283,143
United Kingdom .....	24	14.5 in 1918	187,651,520	728,000,000
England				
Ireland				
Scotland				
Wales				
Belgium .....	10		28,000,000	55,440,000
Holland .....	24	11.0 in 1917	123,000,000	
Norway and Sweden .....	34	47.0 in 1914	106,000,000	
Denmark .....	51	34.0 in 1913 42.0 in 1916	93,166,396	
Germany .....	120	6.0 in 1912	220,000,000	
France .....	12	Unknown	Unknown	Unknown
New Foundland .....	4	Unknown	Unknown	Unknown
Austria .....	10	Unknown	Unknown	Unknown
Havana .....	4	Unknown	Unknown	Unknown
Italy .....	13	Unknown	Unknown	Unknown
Czecho-Slovakia .....	5	Unknown	Unknown	Unknown
Switzerland .....	12	Unknown	Unknown	Unknown
Finland .....	6	Unknown	Unknown	Unknown
Poland .....	1	Unknown	Unknown	Unknown







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